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ABSTRACT

While clinical populations of obese children have been shown to possess negative self-images, little evidence exists that overweight children in non-clinical populations are discriminated against by their peers or possess negative psychological self-evaluations. A study was conducted to examine the relationship among body type, sociometric measures, and self-evaluations in first-, third-, and fifth-graders. Subjects (N=143) had heights and weights taken, responded to sociometric questionnaires, rated their liking for class members, nominated the three classmates they liked the most and the three they liked the least, and completed grade appropriate forms of the Harter Self-Perception Scale. Weight percentile was found to significantly predict sociometric ratings and social preference scores for first graders, with obese children receiving lower evaluations than nonobese children. Body type was not significantly related to any of the sociometric measures for other grades. The subscales on the self-perception assessment differentially predicted sociometric measures at the three ages. These findings suggest that overweight young children are affected by a social stigma. The best predictors of sociometry for first graders were the mother-child relationship, perceptions of peer acceptance, and concrete characteristics such as body type. With development, family ties and body type appeared to give way to more psychological attributes such as perceptions of social acceptance, behavioral adequacy, and physical appearance. (NB)

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THE RELATIONSHIP OF BODY TYPE, SOCIOMETRIC RATINGS AND SELF-PERCEPTIONS IN CHILDREN

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The Relationship of Body Type, Sociometric Ratings, and Self-Perceptions in Children

Children hold a positive stereotype for normal-weight peers over other body types, with this preference increasing with development. Furthermore, clinical populations of obese children have been shown to possess negative self-images. As noted by Lahey, Graziano, and Framer (1983), little evidence exists that overweight children in non-clinical populations are in fact discriminated against by their peers or possess negative psychological self-evaluations. The present research addressed this issue of the relationship among body type, sociometric measures, and self-evaluations in first-, third-, and fifth-grade children.

Heights and weights of 143 children, divided approximately equally among the three grade levels, were taken. In a second session, each child met with a different experimenter and responded to two sociometric questionnaires, ratings and nominations. The children rated their liking for each member of their class using a four-point likert scale. For the nominations task, the children circled the names of three classmates whom they liked the most and, on a separate page, circled the names of three classmates whom they liked the least. In addition to the sociometric measures, grade appropriate forms of the Harter Self-Perception Scale were given. Task presentation order was counterbalanced across children in each grade level.

Body type was determined by converting height and weight measures to weight percentiles using age appropriate normative tables. Sociometric nominations were standardized for each classroom of children and two often-used measures of sociometry were calculated: social preference (liking minus disliking standardized scores) and social impact (liking plus disliking standardized scores). Separate stepwise regression equations for each grade level were constructed using weight percentile, sex, and Harter Self-Perception subscale scores as predictor variables. These variables were used to predict, in turn, sociometric ratings, social preference scores, and social impact scores.

Weight percentile significantly predicted sociometric ratings and social preference scores for the first graders with obese children receiving lower evaluations than nonobese children. Body type was not significantly related to any of the sociometric measures for the third or fifth graders. The subscales on the self-perception assessment differentially predicted sociometric measures at the three ages. For first graders, maternal acceptance was positively related to sociometric ratings and perceptions of peer acceptance were positively related to social impact. For the third graders, there was a positive association between feelings of popularity and social preference scores. Perceptions of behavioral conduct and physical appearance were positively related to social impact scores for the fifth graders.

These results suggest that overweight young children are in fact affected by a social stigma. Interestingly, although the positive stereotype for normal weight individuals increases with age, this attitude does not directly translate into sociometric preferences for third- and fifth-grade children. In summary, the best predictors of sociometry for first graders are the relationship with their mothers, perceptions of peer acceptance, and concrete characteristics such as body type. With development, family ties are less powerful and observable characteristics such as body type give way to more psychological attributes such as perceptions of social acceptance, behavioral adequacy, and physical appearance.

The Relationship of Body Type, Sociometric Ratings, and Self-Perceptions in Children

There is ample evidence documenting the existence of a negative stereotype for overweight individuals (e.g., Kirkpatrick & Sanders, 1978). Children as young as 5 years of age are sensitive to different body types and show a preference for a mesomorphic build (Lerner & Gellert, 1969), and this preference increases with age (Lerner, 1972). Allon (1976) suggested that perhaps the severest consequence of childhood obesity is its negative impact on the socialization of the child. The social stigma of being overweight presumably leads not only to low levels of self-esteem but also to impaired interpersonal functioning.

Three recent studies reported no differences in self-esteem between obese and nonobese 7- to 18-year-old children (Kaplan & Wadden, 1986; Mendelsohn & White, 1982; Wadden, Foster, Brownell, & Finley, 1984). Furthermore, the influence of body type on the sociometry of peer groups is unclear. Sallade (1973) found no evidence of differential preference for obese children among third, fifth, eighth, and eleventh graders. Hammer (1981; reported in Jarvie, Lahey, Graziano, & Framer, 1983) found a preference for the average weight child (third graders) relative to the obese child but the ratings of the obese child reflected less liking rather than more disliking. Staffieri (1967) reported that thin and heavy children, aged 6 to 10,

received fewer positive nominations than those with a mesomorph body build. Thus, any social stigma associated with being overweight has not been reflected in research on children's self-esteem and the data on peer group sociometry, using different sociometric measures and different age groups, report equivocal findings.

In the present study, both peer nominations and rankings were used to address the issue of social stigma and body weight on the sociometry of children. Harter's Self-Perception Profile For Children measure was used to gain an understanding of how domain specific judgments of self competence influences sociometry. In addition, a non-clinical sample of first, third, and fifth graders were assessed to provide not only an indication of this relationship among non-clinical children but also to assess the development of this association in school-aged children.

Method

Subjects

Subjects were 43 first graders (27 males, 16 females; mean age= 7-1), 50 third graders (27 males, 23 females; mean age= 9-1), and 49 fifth graders (25 males, 24 females; mean age= 10-10).

Procedure

Children were assessed individually twice. In the first session, an experimenter obtained the child's height and weight. The second session, occurring approximately one week after the first, was conducted by a different

experimenter. The child completed sociometric nominations and ratings, with the tasks counterbalanced across children in each age group and the Harter self-perception measure delivered between the two sociometric measures. For the nominations task, the child was given a class roster and asked to nominate three children for each of six categories: most liked and most disliked a) in the classroom, b) on the playground, and c) to sit with. For the ratings task, the children rated their liking of each classmate using a 5-point Likert scale. To insure understanding of the rating scale by the first graders, a "happy face" poster was present throughout this task, showing five line drawing faces varying from a deep frown to a broad smile. The children pointed to the face which corresponded to their rating scale choice. For the older children, the 5-point rating scale was described and the child circled the appropriate number for each classmate.

Results

Children's heights and weights were converted to percentiles using the norms established by the Department of Health, Education, and Welfare (Hamill, Drizd, Johnson, Reed, Roche, & Moore, 1979). The range of weight percentiles for each grade level was 5 to 99; median percentiles were first graders, 67; third graders, 61; fifth graders, 65; (overall median was 64).

For the sociometric measures, children were assigned a mean rating score (mean of the liking ratings), six nomination scores (number of nominations for each of six categories: like/dislike in the classroom, like/dislike on the playground, like/dislike to sit with), and a total number of nominations score (sum of nominations across all six categories). The nomination scores were standardized by classroom.

Two additional sociometric measures were based on the total number of liking and total number of disliking nominations. A social preference score was determined by subtracting the child's standardized disliking score from that child's standardized liking score. This measure reflects an absolute measure of popularity. A social impact was calculated by adding the two standardized scores. This measure allows for the differentiation of children who are ignored from those who are controversial.

As shown on the first slide, first graders were highly influenced by the body types of their classmates. Weight percentile was negatively correlated with their sociometric ratings
($r = -.35$, $p < .01$), total liking nominations ($r = -.37$, $p < .01$), and classroom liking and sit with liking nominations ($r = -.34$, $p < .01$ and $r = -.45$, $p < .01$, respectively). In addition, the overweight child was significantly less popular in an absolute sense as suggested

by the significant negative correlation between weight percentile and social preference scores (r = -.32, p < .05).

The body types of their peers were less influential on the sociometric decisions of the older children. Third graders demonstrated a greater classroom liking for thin and average weight peers than for overweight peers (r = -.26, p < .05). In addition, the significant negative relationship between weight percentile and social impact (r = -.24, p < .05) suggests that the overweight child is ignored by peers. None of the correlations between weight percentile and sociometric measures reached statistical significance for the fifth graders.

Consistent with the preceding findings, the relationship between weight percentile and self-perception revealed similar developmental trends and results as shown on the next slide. For first graders, weight percentile was negatively correlated only with physical competence (r = -.27, p < .05) suggesting that the obese child perceives him/herself much less physically capable, but equally capable in other areas. For third graders, weight percentile was negatively correlated with social competence (r = -.36, p < .01). This finding is consistent with the previous finding that third graders prefer thin or average weight peers, thus the obese child would not perceive himself/herself as competent in the social arena. For fifth graders, there was a significant negative relationship between weight percentile and physical appearance (r = -.30,

$p < .05$), suggesting that obese preadolesents perceive themselfs as less physically attractive than their thin and average weight peers.

Discussion

Consistent with research on the development of social cognition (e.g., Shantz, 1975), young children based their person perception judgments on the physical attributes of others more than older children who are better able to cognitively infer the intentions, feelings, etc., of others. It is important to note that even though the first graders relied on body type in their sociometric assessments (i.e., liking ratings, total liking nominations, classroom liking nominations, sit with liking nominations), this reliance was revealed in terms of their liking and not their disliking. Young children preferred the non-overweight peer; they did not dislike the overweight peer. By third grade, and consistent with the findings of Hammer (1981), this preference was continued but on a more limited scale. This preference for non-overweight peers was limited to the context of the classroom and not to the other school situations assessed (e.g., playground and sit with). Also, among the third graders was evidence that the obese child was somewhat ignored relative to peers (i.e., social impact scores). By fifth grade, other, more psychological aspects of relationships governed judgments of sociometry and body type did not enter into these decisions.

Similar to the equivocal relationship between self-esteem and obesity mentioned at the outset (Kaplan & Wadden, 1986; Mendelsohn & White, 1982; Wadden et al., 1984), the present research suggests that the impact of being overweight may not lead to deficiencies in interpersonal functioning, at least in terms of sociometric perceptions of peers beyond the first grade. An important factor in the relationship between body type and interpersonal relationships not addressed in the present report, is the possibility of behavioral differences based on body type which may exist between peers. While the data which are accumulating suggest that any social stigma associated with being obese does not lie either within the overall or global self judgments of the obese child, or in the perceptions of peers, it may still be the case that the overweight child engages in different peer interactions than normal weight and thin children. Observation of behavioral interactions across social settings is needed to further clarify the relationship between body type and sociometric status reported in the present study.

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Significant Correlation Coefficients of Weight Percentile with Sociometric Ratings and Rankings by Grade Level.

	Grade Level		
	1st (n=43)	3rd (n=50)	5th (n=49)
Sociometric Rating	-.35**	--	--
Sociometric Nominations			
Total "Liking"	-.37**	--	--
Total "Disliking"	--	--	--
"Class" Liking	-.34**	-.26*	--
"Class" Disliking	--	--	--
"Playground" Liking	--	--	--
"Playground" Disliking	--	--	--
"Sit With" Liking	-.45**	--	--
"Sit With" Disliking	--	--	--
Social Preference	-.32*	--	--
Social Impact	--	-.24*	--

* $p < .05$; ** $p < .01$

Significant Correlation Coefficients of Weight Percentile and Harter Self Perception Profile.

	Grade Level		
Harter subscales	1st (n=43)	3rd (n=50)	5th (n=49)
Cognitive competence	--		
Peer acceptance	--		
Physical competence	-.27*		
Maternal acceptance	--		
Scholastic competence		--	--
Social acceptance		-.36**	--
Athletic competence		--	--
Physical appearance		--	-.30*
Behavioral conduct		--	--
Global self-worth		--	--

* $p < .05$; ** $p < .01$